

MPE CALCULATION

FCC ID: SSH-SYNKTX, FCC ID: SSH-SDMAN

RF Exposure Requirements:	47 CFR §1.1307(b)
RF Radiation Exposure Limits:	47 CFR §1.1310
RF Radiation Exposure Guidelines:	FCC OST/OET Bulletin Number 65
EUT Frequency Band:	2402-2480 MHz, 2412 - 2462 MHz; 5180 - 5825MHz
Limits for General Population/Uncontrolled Exposure in the band of:	300 – 1500 GHz
Power Density Limit:	1 mW/ cm ² ;

Equation: $S = PG / 4\pi R^2$ or $R = \sqrt{PG / 4\pi S}$

Where, S = Power Density

P = Power Input to Antenna

G = Antenna Gain

R = distance to the center of radiated antenna

For SSH-SYNKTX

Mid Channel: 5785MHz per 15.247,

TX-Chain1: Power = 7.90 dBm, Antenna Gain = 1.9 dBi, Prediction distance 20cm, **S01 = 0.0019 mW/cm²**

TX-Chain2: Power = 5.95 dBm, Antenna Gain = 1.9 dBi, Prediction distance 20cm, **S02 = 0.0012 mW/cm²**

TX-Chain3: Power = 8.20 dBm, Antenna Gain = 1.9 dBi, Prediction distance 20cm, **S03 = 0.0020 mW/cm²**

TX-Chain4: Power = 7.06 dBm, Antenna Gain = 1.9 dBi, Prediction distance 20cm, **S04 = 0.0016 mW/cm²**

Total S00 = S01 + S02 +S03 + S04 = 0.0019 mW/cm² + 0.0012 mW/cm²+ 0.0020 mW/cm² + 0.0016 mW/cm²=0.0067 mW/ cm²

Mid Channel: 5560MHz per 15.407

TX-Chain1: Power = 8.55 dBm, Antenna Gain = 1.9 dBi, Prediction distance 20cm, **S11 = 0.0022 mW/cm²**

TX-Chain2: Power = 6.27 dBm, Antenna Gain = 1.9 dBi, Prediction distance 20cm, **S12 = 0.0013 mW/cm²**

TX-Chain3: Power = 10.34 dBm, Antenna Gain = 1.9 dBi, Prediction distance 20cm, **S13 = 0.0033 mW/cm²**

TX-Chain4: Power = 9.70 dBm, Antenna Gain = 1.9 dBi, Prediction distance 20cm, **S14 = 0.0028 mW/cm²**

Total S10 = S11 + S12 +S13 + S14 = 0.0022 mW/cm² + 0.0013 mW/cm²+ 0.0033 mW/cm² + 0.0028 mW/cm²=0.0096 mW/ cm²

For SSH-SDMAN

For Bluetooth, Power = 13.93 mW, Max Antenna Gain = 2.0 dBi, Prediction distance 20cm, **S2 = 0.00439 mW/cm²**

For Bluetooth LE mode, Power = 8.63 mW, Max Antenna Gain = 2.0 dBi, Prediction distance 20cm, **S3 = 0.00272 mW/cm²**

For WLAN in 15.247, Power = 197.96 mW, Max Antenna Gain = 2.5 dBi, Prediction distance 20cm, **S4 = 0.07003 mW/cm²**

For WLAN in 15.407, Power = 24.66 mW, Max Antenna Gain = 2.5 dBi, Prediction distance 20cm, **S5 = 0.00872 mW/cm²**

The combined highest MPE

$$S=S_{10}+S_5=0.0096 \text{ mW/cm}^2 + 0.07003 \text{ mW/cm}^2 = 0.07963 \text{ mW/cm}^2$$

Result

The result had shown that Device complied with 1 mW/cm² Power density requirement for distance of 20cm.

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